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ABSTRACT
              Because much conjecture (but limited empirical
research) exists about the nonverbal variable to time, this
exploratory study investigated the effects of differential arrival
times on four dimensions of source credibility: sociability,
dynamism, competence, and composure. Subjects were 84 educational
secretaries with a mean age of 49 years. Each subject completed 25
semantic differential credibility scales for each of three arrival
times: 15 minutes early, on time, and 15 minutes late. Data were
analyzed with factor analysis, analyses of variance, and appropriate
Scheffe tests. Results showed that: (1) the late arriver is perceived
as less sociable and less competent than early or on-time arrivers;
(2) the early arriver is perceived as less dynamic than the late or
on-time arrivers; and (3) the on-time arriver is perceived as most
composed while the late arriver is perceived as least composed.
(Author/TS)

AN EXPLORATORY INVESTIGATION OF

DIFFUSED POINT ARRIVAL TIME AND SOURCE CREDIBILITY

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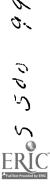Lewis and Clark College
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ABSTRACT

Much conjecture, but limited empirical research, exists about the nonverbal variable of time. The present exploratory study investigated the effects of differential arrival times on four dimensions of source credibility. Subjects attending the annual conference of the National Association of Educational Secretaries completed twenty-five semantic differential credibility scales for each of three arrival times (15 minutes early, on-time, 15 minutes late). Data were analyzed with factor analysis, analyses of variance, and appropriate Scheffé tests. Results showed: (1) the late arriver is perceived as less sociable and less competent than early or on-time arrivers; (2) the early arriver is perceived as less dynamic than the late or on-time arrivers; (3) the on-time arriver is perceived as most composed while the late arriver is perceived as least composed.

"Time talks. It speaks more plainly than words. The message it conveys comes through loud and clear."[1] While students of the nonverbal variable of time agree that "time talks," limited research exists to decode the "message" which is assumed to be "loud and clear." Edward T. Hall's The Silent Language is rich with conjecture about the North American use of time, especially as it relates to person perception. Punctuality is viewed by Hall as a key determinant of source credibility:

> Promptness is also valued highly in American life. If people are not prompt, it is often taken either as an insult or as an indication that they are not quite responsible.[2]

C. David Mortensen concurs with Hall when he says, "Wasting time or inefficient use of it, insensitivity to time, and poor timing are in themselves considered socially unacceptable."[3]

Despite this extensive conjecture, the present investigators have found only one study that directly explores the relationship between arrival time and source credibility. Wheeless et al. asked college students to evaluate nine source dimensions (competence, sociability, extroversion, character, composure, task attraction, physical attraction, social attraction, and homophily) before and after waiting for the arrival of scheduled interviewers.[4] Ten 5-minute interval periods (0 to 45 minutes) were used as waiting times. The results of the study showed that only one of the source dimensions, competence, was significantly affected by waiting time and this only after the 45-minute waiting time interval.

Yet Hall suggests that even the five-minute delay is meaningful in our culture.[5] Perhaps the absence of an effect prior to the 45-minute wait in the Wheeless et al. study can be attributed to the manner in which subjects waited--in groups of subjects undergoing identical waiting conditions. Schachter has indicated that affiliation with others serves as an anxiety-

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reducing mechanism.[6] Perhaps, as students waited in groups for
the expected interviewers, their anxiety over waiting was
reduced and they failed to derogate the interviewer. Further
research should seek to control this confounding variable of
group affiliation. In addition, since many of Hall's time
hypotheses are based on examples drawn from business settings,
it appears appropriate for further research to test his
hypotheses outside of the college setting. It is important to
recognize that with their 0 to 45 minute late times, Wheeless
et al. dealt only with what Hall refers to as "displaced point
pattern" time. Hall suggests:

> In addition there are two basic American patterns
> that often conflict. I have termed these the
> "diffused point pattern" and the "displaced point
> pattern." The difference has to do with whether
> the leeway is on one side of the point or is
> diffused around it.[7]

Following Hall's analysis, further research should include
diffuse point patterns with early as well as on-time and
late arrivals.

The present investigation explored individual perception
of source credibility based on diffused point pattern times
outside the college setting.

Methods

Respondents were eighty-four educational secretaries
attending the annual conference of the National Association
of Educational Secretaries, July, 1972. With a mean age of
49 years, they represented several geographical areas of the
United States. Each respondent completed a semantic differential
for each of three concepts: "Person A who arrives 15 minutes late
for an appointment," "Person B who arrives 15 minutes early for
an appointment," and "Person C who arrives on-time for an
appointment." Twenty-five of the most reliable source
credibility adjective pairs were included in the scale.[8]

Data were scored in such a manner that higher scores represented more favorable evaluations.

An overall factor structure was derived by principal components factor analysis with varimax rotation (N=252). An eigenvalue of at least 1.0 was established as the cutoff point for interpretation of factors. It was decided that an item should have a loading of at least .60 on the main factor and no more than .40 on other factors to load on a given factor. Factor scores were derived by summing the scores of all items loading on the particular factor. Once factors were determined, each factor was submitted to a oneway analysis of variance with repeated measures in order to compare the three arrival times. Subsequent Scheffé tests were applied when appropriate. The .05 level of significance was required for rejection of the null hypothesis.

Results

The factor analysis yielded four factors that accounted for 64.9% of the variance. Because of item similarity to the "peers" factor structure found by McCroskey, Scott, and Young,[9] the factors were labelled: sociability, dynamism, competence, and composure. Table 1 provides the items loading on each of these factors.

A oneway analysis of variance of the sociability dimension revealed significant difference between the arrival times at beyond the .01 level of significance. Since sociability scores represented the summation of seven item scores, a sociability score could range from a low of 7 to a high of 49. Subsequent Scheffé test analysis revealed that the late arriver ($\bar{X}$=32.06) is perceived as least favorable on the sociability dimension while the early arriver ($\bar{X}$=34.73) is perceived as less sociable than the on-time arriver ($\bar{X}$=37.04). Table 2 provides the statistical values relevant to the sociability dimension.

A oneway analysis of variance of the dynamism dimension revealed significant difference between the arrival times at beyond the .01 level. Dynamism scores represented the summation of two item scores, thus ranging from a low of 2 to a high of 14. Subsequent Scheffé test analysis indicated that the early arriver ($\bar{X}$=7.87) is perceived as significantly less dynamic than either the late arriver ($\bar{X}$=9.35) or the on-time arriver ($\bar{X}$=8.82). The late and on-time arrivers do not differ significantly from one another. Table 3 provides more specific statistical results.

A oneway analysis of variance of the competence dimension indicated significant difference between the arrival times at beyond the .01 level. Again, competence scores represented the sum of two item scores, ranging from 2 to 14. Subsequent Scheffé analysis found that the late arriver ($\bar{X}$=7.01) is perceived as less competent than either the early arriver ($\bar{X}$=10.70) or the on-time arriver ($\bar{X}$=11.54). The latter two do not differ significantly. Table 4 presents more specific statistical results.

Table 5 presents the results of the statistical analyses of the composure dimension. Composure scores, representing the sum of two items, ranged from 2 to 14. A oneway analysis of variance found significant difference between the arrival times at beyond the .01 level. Subsequent Scheffé analysis revealed that the late arriver ($\bar{X}$=7.06) is perceived as least composed; the early arriver ($\bar{X}$=9.25) is perceived as more composed than the late arriver but less composed than the on-time arriver; the on-time arriver ($\bar{X}$=10.94) is perceived as most composed.

In brief, the results of this study indicated the following:

1. Credibility of persons with differential arrival times is a multi-dimensional perception, comprised of four factors or dimensions: sociability, dynamism, competence, and composure.
2. The late arriver is perceived as less sociable than the early or on-time arrivers.
3. The early arriver is perceived as less dynamic than the late or on-time arrivers.
4. The late arriver is perceived as less competent than the early or on-time arrivers.
5. Perceptions of composure vary from a low with late arrivers to a high with on-time arrivers.

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Discussion

The results of this exploratory investigation suggest that there is a significant relationship between arrival time and source credibility. The specific findings, however, differ somewhat from prior research and conjecture. First, the present study disclosed significant source credibility effects based on a 15-minute interval of diffused time while Wheeless et al. found significance with only a 45-minute displaced time. Second, the present investigators found significant differences with four dimensions of source credibility while Wheeless et al. found significant differences with only the competence dimension. Methodological differences may account for diversity in study results. For instance, the present investigation included early as well as on-time and late arrivals.

The results of the present study support Hall's general observation that deviations from punctuality affect interpersonal perceptions. These deviations, early or late, clearly affect source credibility and warrant additional research into Hall's "diffused point pattern" time.

Further research is needed to refine the tentative conclusions of the present study. Certainly, time intervals in addition to the 15-minute deviation should be explored with the diffused point pattern. Assessment techniques other than the traditional pencil-and-paper measurement should be employed, also. Hall's thesis of differential time conception by geographical location, occupation, social setting, etc. should be examined. As a beginning point in understanding the time variable, the present study was limited to a pencil-and-paper assessment of source credibility and a 15-minute diffused time interval. While the subjects represented a variety of geographical regions, it should be noted that all subjects were female and shared common occupational backgrounds. We cannot fully decode the nonverbal "messages" of time until these important considerations are included in future research.

NOTES

1. Edward T. Hall, <u>The Silent Language</u> (Greenwich, Conn.:
   Fawcett Publications, Inc., 1959), p. 15.
2. Ibid., p. 21.
3. C. David Mortensen, <u>Communication: The Study of Human Interaction</u>
   (New York: McGraw-Hill Book Company, 1972), p. 307.
4. Lawrence R. Wheeless, Stephen Jones, and Lyle King, "Effects
   of Waiting Time on Credibility, Attraction, Homophily, and
   Anxiety-Hostility." Paper presen' 'd at the International
   Communication Association Conven   a, April, 1973.
5. Hall, p. 136.
6. S. Schachter, <u>The Psychology of Affiliation</u> (Stanford: Stanford
   University Press, 1959).
7. Hall, p. 143.
8. J. McCroskey, M. Scott, and T. Young, "The Dimensions of
   Source Credibility for Spouses and Peers." Paper presented
   at the Western Speech Communication Association Convention,
   November, 1971.
9. <u>Ibid.</u>

TABLE 1
Factor Analysis of Credibility Ratings

Item:	Factor: I (Sociability)	II(Dynamism)	III(Competence)	IV(Composure)
silent-talkative	.14	.55	.11	.21
goodnatured-irritable	.64*	.09	.05	.34
unsympathetic-sympathetic	.63*	.00	.27	.13
informed-uninformed	.39	.04	.54	.38
calm-anxious	.20	.00	.22	.70*
crude-refined	.64	.11	.44	.21
bad-good	.68*	.01	.39	.10
unfriendly-friendly	.70*	.18	.22	.14
kind-cruel	.73*	.12	.28	.22
introverted-extroverted	.22	.61*	.05	.07
undependable-responsible	.34	.16	.72*	.25
meek-aggressive	.03	.59	.20	.03
excitable-composed	.26	.18	.31	.64*
awful-nice	.77*	.01	.33	.15
virtuous-sinful	.49	.03	.41	.06
sociable-unsociable	.57	.46	.18	.16
bold-timid	.08	.73*	.08	.01
intellectual-narrow	.57	.07	.56	.13
inexperienced-experienced	.44	.14	.59	.39
logical-illogical	.49	.02	.56	.30
gloomy-cheerful	.64	.34	.14	.41
trained-untrained	.39	.05	.65*	.35
headstrong-mild	.26	.49	.27	.10
attractive-repulsive	.70*	.11	.27	.11
tired-energetic	.44	.39	.38	.16
Eigenvalue:	10.78	2.98	1.40	1.07
Variance accounted for:	43.1	11.9	5.6	4.3

TABLE 2
Sociability Dimension: Statistical Analyses

I. F Table

source:	d.f.	SS	mean SS	F value
Treatments	2	1041.69	520.84	18.25*
Error	166	4738.14	28.54	
Subjects	83	7238.29		
Total	251	13018.12		

*F value of 4.60 was needed to reject the null hypothesis at the .01 level.

II. Scheffé test

Differences of group means:	Significance:*
Late-Early: 2.67	.01
Late-Ontime: 4.98	.01
Early-Ontime: 2.31	.05

*For significance at the .05 level, group difference at least 2.02; for significance at the .01 level, group difference at least 2.50.

TABLE 3
Dynamism Dimension: Statistical Analyses

I. F Table

source:	d.f.	SS	mean SS	F value
Treatments	2	94.09	47.05	9.75*
Error	166	800.59	4.82	
Subjects	83	446.29		
Total	251	1340.97		

*F value of 4.60 was needed for significance at the .01 level.

II. Scheffé test

Differences of group means:	Significance:*
Late-Early: 1.48	.01
Late-Ontime: .53	NSD
Early-Ontime: .95	.05

*For significance at the .05 level, group difference at least .83; for significance at the .01 level, group difference at least 1.03.

TABLE 4
Competence Dimension: Statistical Analyses

I. F Table

source:	d.f.	SS	mean SS	F value
Treatments	2	973.81	486.90	83.23*
Error	166	970.44	5.85	
Subjects	83	553.00		
Total	251	2497.25		

*F value of 4.60 was needed for significance at the .01 level.

II. Scheffé test

Differences of group means:		Significance:*
Late-Early:	3.69	.01
Late-Ontime:	4.53	.01
Early-Ontime:	.84	NSD

*For significance at the .05 level, group difference at least .91;
 for significance at the .01 level, group difference at least 1.12.

Table 5
Composure Dimension: Statistical Analyses

I. F Table

source:	d.f.	SS	mean SS	F value
Treatments	2	636.09	318.05	32.86*
Error	166	1606.91	9.68	
Subjects	83	302.25		
Total	251	2545.25		

*F value of 4.60 was needed for significance at the .01 level.

II. Scheffé test

Differences of group means:		Significance:*
Late-Early:	2.19	.01
Late-Ontime:	3.88	.01
Early-Ontime:	1.69	.01

*For significance at the .05 level, group difference at least 1.18;
 for significance at the .01 level, group difference at least 1.45.